

## CLAIMS

WE CLAIM:

1. A fitting removal tool for retracting the locking collar of an open ended hydraulic/pneumatic fitting comprising:
  - 5 a seat structured and arranged to seat against the open end of the fitting;
  - a housing structured and arranged to house the seat;
  - an adjustable actuator structured and arranged to laterally actuating the seat within the housing;
  - a swivel structured and arranged to maintaining the seat in a given orientation; and
  - 10 an attacher integral to the housing, the attacher structured and arranged to attach the housing to the locking collar of the fitting.
2. A fitting removal tool for retracting the locking collar of an open ended hydraulic/pneumatic fitting comprising:
  - 15 a housing having an internal channel partially along a longitudinal axis;
  - a swivel seat disposed within the internal channel configured to engage the open end of the fitting;
  - an adjustable actuator coupled to the swivel seat and configured to laterally actuate the swivel seat within the internal channel; and
  - 20 an attacher integral to the housing and configured to attach the housing to the locking collar of the fitting.
3. The fitting removal tool of claim 2, wherein the attacher is not radially expandable.
4. The fitting removal tool of claim 2, wherein the attacher is slip-fit onto the locking collar of the fitting.
5. The fitting removal tool of claim 2, wherein the fitting removal tool is sized and shaped to permit one-handed operation.
- 25 6. The fitting removal tool of claim 2, wherein the housing is further characterized as a right cylindrical housing having a first end and a second end.
7. The fitting removal tool of claim 6, wherein the attacher is further characterized by an internal pocket, proximate to the second end and transverse to the longitudinal axis and an aperture in the second end providing access to the pocket.
- 30 8. A fitting removal tool for retracting the locking collar of an open ended hydraulic/pneumatic fitting comprising:

- seating means for seating against the open end of the fitting;  
housing means for housing the seating means;  
actuating means for laterally actuating the seating means within the housing means;  
swivel means for maintaining the orientation of the seating means during actuation;
- 5           and
- attaching means integral to the housing means for attaching the housing means to the locking collar of the fitting.
9. The fitting removal tool of claim 8, wherein the attaching means is not radially expandable.
- 10          10. The fitting removal tool of claim 8, wherein the attaching means is slip-fit onto the locking collar of the fitting.
11. The fitting removal tool of claim 8, wherein the fitting removal tool is sized and shaped to permit one-handed operation.
12. A fitting removal tool for retracting the locking collar of an open ended hydraulic/pneumatic fitting comprising:
- 15           a right cylindrical housing having a first end, a second end, a longitudinal axis therebetween, and further characterized by:
- a base in the first end;
- an internal pocket, proximate to the second end and transverse to the longitudinal axis;
- 20           an aperture in the second end, concentric to the longitudinal axis;
- an internal channel, concentric to the longitudinal axis and extending from the pocket towards the first end; and
- an adjustable actuator extending through the base and passing into the internal
- 25           channel; and
- a swivel seat coupled to the adjustable actuator and disposed within the internal channel.
13. The fitting removal tool of claim 12, wherein the adjustable actuator is a threaded rod passing through a mated threaded hole in the base.
- 30          14. The fitting removal tool of claim 13, further comprising a grip mounted to the threaded rod opposite from the swivel seat.

15. The fitting removal tool of claim 14, wherein the grip further provides a socket for removable attachment of a lever.
16. The fitting removal tool of claim 15, wherein the lever is a ratchet driver.
17. The fitting removal tool of claim 12, wherein the aperture opens to the pocket.
- 5 18. The fitting removal tool of claim 12, wherein the pocket is circumferential.
19. The fitting removal tool of claim 12, further comprising an opening in the housing extending from the housing second end to at least partially beyond the pocket, wherein the opening exposes a portion of the pocket and the aperture.
- 10 20. The fitting removal tool of claim 19, wherein the opening extends to about halfway to the housing first end.
21. The fitting removal tool of claim 19, wherein the exposed portion of the pocket and aperture are structured and arranged to slip-fit onto the locking collar of the fitting.
22. The fitting removal tool of claim 12, wherein the swivel seat is structured and arranged to seat against an aperture.
- 15 23. The fitting removal tool of claim 22, wherein the aperture is the open end of the fitting.
24. The fitting removal tool of claim 23, wherein the swivel seat further has a pilot with an outside diameter sized to about substantially the same as the inside diameter of the open end of the fitting, the pilot thereby snugly fitting within the open end.
- 20 25. The fitting removal tool of claim 24, wherein the pilot is conically tapered to assist with aligning the pilot to the open end of the fitting.
26. The fitting removal tool of claim 23, wherein the swivel seat maintains a constant orientation relative to the engaged open end of the fitting as the adjustable actuator is actuated.
- 25 27. The fitting removal tool of claim 12, wherein the internal channel is substantially about two-thirds of the length of the housing.
28. The fitting removal tool of claim 12, wherein the fitting removal tool is sized and shaped to permit one-handed operation.

29. A method of retracting the locking collar of an open ended hydraulic/pneumatic fitting using a removal tool having a cylindrical housing having a first end, a second end, a partially exposed internal channel concentric to the longitudinal axis, a pocket transverse to the longitudinal axis and proximate to the housing second end, an adjustable actuator extending through the first end into the internal channel and joined to a swivel seat disposed and laterally actuated within the internal channel, the method comprising:
- 5                   actuating the adjustable actuator in a first direction to retract the swivel seat within the slot;
- 10                  placing the removal tool parallel to the fitting such that the partially exposed internal channel and pocket are presented to the fitting;
- slip-fitting the pocket over the locking collar of the fitting;
- actuating the adjustable actuator in a second direction to advance the swivel seat to engage the open end of the fitting; and
- 15                  applying force by driving the adjustable actuator in the second direction, the force through the base providing a lateral motion of the cylindrical housing relative to the swivel seat engaging the open end of the fitting.
30. The method of claim 29, wherein the adjustable actuator is a threaded rod passing through a mated threaded hole in the housing first end.
- 20                  31. The method of claim 30, wherein the applied force is provided by torquing the threaded rod, the torquing achieved with a driver removably attached to the threaded rod.
32. The method of claim 29, wherein operation of the fitting removal tool may be performed with one hand.
- 25                  33. The method of claim 29, wherein the slip-fitting is performed by sliding the removal tool perpendicularly to the longitudinal axis so as to maintain parallelism between the removal tool and the fitting.